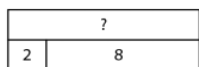
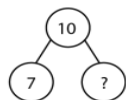


**Addition facts:** Facts pupils need to know to fluency and be able to quickly recall. *By the end of Year 2*

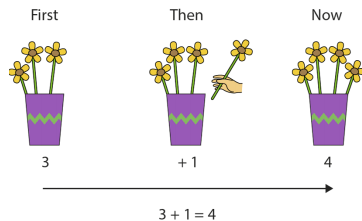
**Pairs of numbers that total 10**

0 + 10  
1 + 9  
2 + 8  
3 + 7  
4 + 6  
5 + 5  
6 + 4  
7 + 3  
8 + 2  
9 + 1



**Adding 1:** Adding 1 gives 1 more

1 + 1 = 2  
2 + 1 = 3  
3 + 1 = 4  
4 + 1 = 5  
5 + 1 = 6  
6 + 1 = 7  
7 + 1 = 8  
8 + 1 = 9



**Adding 0:** When zero is added to a number it remains unchanged.

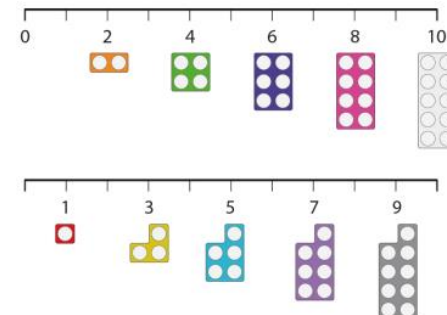
1 + 0 = 1   2 + 0 = 2   3 + 0 = 3   4 + 0 = 4   5 + 0 = 5  
6 + 0 = 6   7 + 0 = 7   8 + 0 = 8   9 + 0 = 9

**Adding 2:**

**Adding two to an odd number gives the next odd number.**

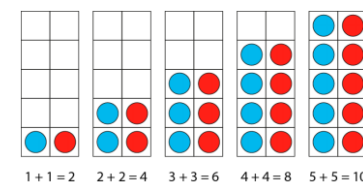
**Adding two to an even number gives the next even number.**

2 + 2 = 4  
4 + 2 = 6  
6 + 2 = 8  
8 + 2 = 10  
1 + 2 = 3  
3 + 2 = 5  
5 + 2 = 7  
7 + 2 = 9  
9 + 2 = 11



**Doubles (up to double 10)**

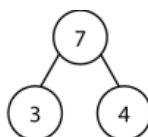
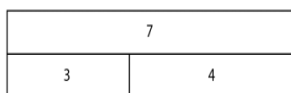
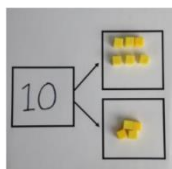
1 + 1 = 2      6 + 6 = 12  
2 + 2 = 4      7 + 7 = 14  
3 + 3 = 6      8 + 8 = 16  
4 + 4 = 8      9 + 9 = 18  
5 + 5 = 10     10 + 10 = 20



**Addition structures: Part-part whole Year 1**

Combining 2 or more parts to make whole

...is the whole, ... is a part and ... is a part

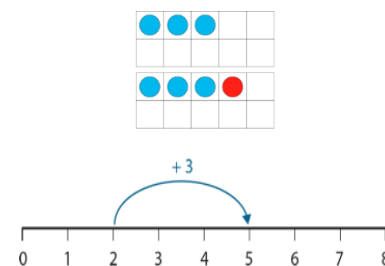
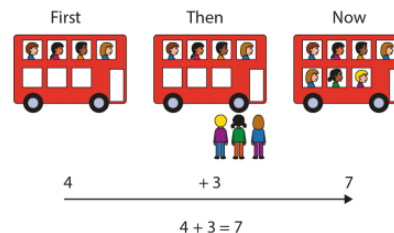


3 + 4 = 7  
4 + 3 = 7  
7 = 4 + 3  
7 = 3 + 4

**Addition structures Adding on more Year 1**

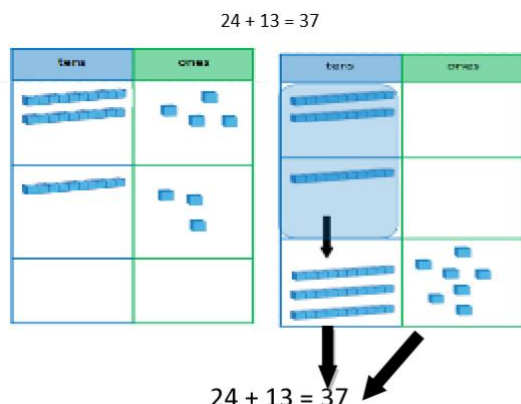
Where a quantity is increased in size

First there was 4 children on the bus, then 3 more got on, now there are 7 children on the bus



**Partitioning to add (2 or more digits):** Using concrete, pictorial or known facts. Introduced in Year 2

**Concrete: using Dienes**



- Make both numbers by partitioning into tens and ones
- $24 = 2$  tens and 4 ones
- $13 = 1$  ten and 3 ones
- Add the ones:  $4 + 3 = 7$
- Add the tens:  $2$  tens +  $1$  ten/  $20 + 10 = 30$
- Combine the tens and ones together.  $30 + 7 = 37$

**Pictorial: using drawings to represent the Dienes**

$358 + 38 =$



- Draw Dienes for both numbers by partitioning into tens and ones
- $358$ : 3 hundreds, 5 tens and 8 ones
- $38$ : 3 tens and 8 ones
- Add the ones:  $8 + 8 = 16$
- **Regrouping:** regroup 16 ones into 1 group of ten and 6 ones
- Add the tens: 5 tens + 3 tens + 1 ten (regrouped from ones) = 9 tens/  $50 + 30 + 10 = 90$
- Add the hundred: 3 tens + 0 tens/  $300 + 0 = 300$
- Combine the hundreds, tens and ones together:  $300 + 90 + 6 = 396$

**Jottings: using known facts**

$$\begin{array}{r} 45 \\ 40 \quad 5 \end{array} + \begin{array}{r} 23 \\ 20 \quad 3 \end{array}$$

*First I partition the forty-five into forty and five, and the twenty-three into twenty and three.'*

$40 + 20 = 60$

*Forty plus twenty is equal to sixty...'*

$5 + 3 = 8$

*...five plus three is equal to eight...'*

$60 + 8 = 68$

*...and sixty plus eight is equal to sixty-eight.'*

**Column method (2 digits that require re-grouping or 3 digits or more)** Introduced in Year 3

- Make sure digits line up carefully in the correct place value column.
- Always start with adding the ones and work from right to left.
- Use known addition facts to help add up each column
- If the total for a column is 10 or greater you have to regroup. Show this by writing the regrouped ten/hundred/thousand underneath the next column.

Tens Ones

$$\begin{array}{r} 24 \\ + 17 \\ \hline 1 \\ \hline 41 \end{array}$$

First add the ones.  
Re-group 10 ones to 1 ten.  
Next add the tens.

$$\begin{array}{r} 34623 \\ + 5541 \\ \hline 40164 \end{array}$$

